

a transmitter, coupled to said one or more computer memory devices, for transmitting a stream of data packets containing selected portions of said information database; and

a multiplicity of subscriber stations for receiving said transmitted stream of data packets, each subscriber station including a data filter that stores filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

said subscriber stations including data processing apparatus that automatically adds, in accordance with predefined criteria, data corresponding to ones of said cross-referencing indices embedded in said downloaded data packets to said filter data so as to specify additional data packets to be downloaded;

whereby said subscriber station automatically downloads data packets containing data related to data contained in requested data packets, thereby anticipating potential additional requests that a user may make and speeding access thereto,

wherein

said set of indices include timestamps therein indicating when each said portion of the information database referenced by an index is to be transmitted; and

said subscriber stations's data processing apparatus furthermore decoding said timestamps in said indices;

whereby subscribers can be informed as to when a specified portion of the information database will be received.

1518. (three times amended) The information transmission system of claim 15,

further including a transmission scheduler for scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database one or more scheduled transmission times;

C<sup>2</sup> wherein the timestamp in indices referencing portions of the information database not scheduled for transmission is null, indicating that said referenced portions of the information database are transmitted only upon request by subscribers.

28 37. (twice amended) [The] An information transmission method [of claim 36,] comprising the steps of:

storing an information database on one or more memory devices;

C<sup>3</sup> generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;  
said storing step further including embedding in said information database cross-referencing indices for cross-referencing related information;

transmitting a stream of data packets containing selected portions of said information database;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets;

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets; and

said storing filter data step furthermore including automatically adding, in accordance with predefined criteria, data corresponding to ones of said cross-referencing indices embedded in said downloaded data packets to said filter data so as to specify additional data packets to be downloaded;

whereby said subscriber station automatically downloads data packets containing data related to data contained in requested

data packets, thereby anticipating potential additional requests that a user may make and speeding access thereto;

C3 wherein said generating step generates indices including timestamps therein, said timestamps indicating when each said portion of the information database referenced by an index is to be transmitted;

said method including decoding said timestamps in said indices at said subscriber stations;

whereby subscribers can be informed as to when a specified portion of the information database will be received.

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35 52. (twice amended) [The] An information transmission system, [of claim 51,] comprising:

a set of one or more computer memory devices on which is stored an information database;

C4 database editing means, coupled to said one or more computer memory devices, for generating a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and for embedding said indices in said information database;

transmission scheduler for scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

a transmitter, coupled to said transmission scheduler and said one or more computer memory devices, for transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

subscriber stations that receive said transmitted stream of data packets, each subscriber station including data filter that stores filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which

comprises a subset of said transmitted data packets, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

said transmitter including a central program transmission station that transmits said stream of data packets, and one or more cable television systems that receive the transmitted stream of data packets and retransmit said stream of data packets via cables to a set of subscribers, said central program transmission station further transmitting in said stream of data packets special data packets indicating where in said stream of data packets local programming data packets may be inserted; and

one or more of said cable television systems including a data switch for inserting into the stream of retransmitted data packets local programming data packets at positions in said stream of data packets indicated by said special data packets.

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3653. (twice amended) [The] An information transmission system, [of claim 51,] comprising:

a set of one or more computer memory devices on which is stored an information database;

database editing means, coupled to said one or more computer memory devices, for generating a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and for embedding said indices in said information database;

transmission scheduler for scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

a transmitter, coupled to said transmission scheduler and said one or more computer memory devices, for transmitting a stream of data packets containing said selected portions of said

information database in accordance with said scheduled transmission times;

subscriber stations that receive said transmitted stream of data packets, each subscriber station including data filter that stores filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

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said transmitter including a central program transmission station that transmits said stream of data packets, and one or more cable television systems that receive the transmitted stream of data packets and retransmit said stream of data packets via cables to a set of subscribers, said central program transmission station further transmitting in said stream of data packets special data packets designated as suitable for pre-emption by local programming; and

one or more of said cable television systems includes means for inserting into the stream of retransmitted data packets additional "local programming" data packets so as to pre-empt said special data packets designated as suitable for pre-emption.

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54. (twice amended) [The] An information transmission system, [of claim 51,] comprising:

a set of one or more computer memory devices on which is stored an information database;

database editing means, coupled to said one or more computer memory devices, for generating a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and for embedding said indices in said information database;

transmission scheduler for scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a

transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

a transmitter, coupled to said transmission scheduler and said one or more computer memory devices, for transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

subscriber stations that receive said transmitted stream of data packets, each subscriber station including data filter that stores filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

wherein said transmission scheduler reserves transmission times for transmitting portions of said information database requested by subscribers;

said information transmission system including a subscriber request receiver that receives requests from subscribers, said requests each specifying a portion of said information database; and

said transmitter further transmitting said requested portions of said information database during said reserved transmission times.

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55. (twice amended) [The] An information transmission system, [of claim 51,] comprising:

a set of one or more computer memory devices on which is stored an information database;

database editing means, coupled to said one or more computer memory devices, for generating a set of indices for referencing data in said information database, including distinct indices for

referencing distinct portions thereof, and for embedding said indices in said information database;

transmission scheduler for scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

a transmitter, coupled to said transmission scheduler and said one or more computer memory devices, for transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

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subscriber stations that receive said transmitted stream of data packets, each subscriber station including data filter that stores filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

wherein one or more subsets of said subscriber stations are interconnected via a local area network, including a network server that receives said transmitted stream of data packets on behalf of an associated set of subscriber stations, said network server including a data filter that references a set of requested data packets, said set of requested data packets representing data packets requested by said associated set of subscriber stations, and that downloads into a memory storage device those of said received data packets which match said specified set of requested data packets;

said database editing means further embedding in said information database cross-referencing indices for cross-referencing related information;

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cancel. said network server including data processing apparatus that adds, in accordance with predefined criteria, data packets corresponding ones of said cross-referencing indices embedded in said downloaded data packets to said set of requested data packets so as to specify additional data packets to be downloaded;

whereby overhead associated with receiving the stream of data packets and downloading for storage a specified subset thereof is shared by a set of subscribers.

39-57. (amended) [The] An information transmission [system of claim 56,] method comprising the steps of:

storing an information database on one or more memory devices;

C.5 generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;

scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets; and

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets;



wherein said generating step generates indices including timestamps therein, said timestamps indicating when each said portion of the information database referenced by an index is to be transmitted;

C5 said method including decoding said timestamps in said indices at said subscriber stations;

whereby subscribers can be informed as to when a specified portion of the information database will be received.

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41/55. (amended) The information transmission [system] method of claim ~~58~~ <sup>40</sup>,

scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database one or more scheduled transmission times;

C6 wherein the timestamp in indices referencing portions of the information database not scheduled for transmission is null, indicating that said referenced portions of the information database are transmitted only upon request by subscribers.

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42/56. (twice amended) [The] An information transmission [system of claim 56,] method comprising the steps of:

storing an information database on one or more memory devices;

C7 generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;

scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets; and

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets;

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said transmitting step including transmitting said stream of data packets to one or more cable television systems that receive the transmitted stream of data packets and retransmit said stream of data packets via cables to a set of subscribers, and including in said stream of data packets special data packets indicating where in said stream of data packets local programming data packets may be inserted; and

one or more of said cable television systems inserting into the stream of retransmitted data packets local programming data packets at positions in said stream of data packets indicated by said special data packets.

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61. (twice amended) [The] An information transmission [system of claim 56,] method comprising the steps of:

storing an information database on one or more memory devices;

generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;

scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and

one or more scheduled transmission times in accordance with said assigned repetition rate;

transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets; and

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets;

said transmitting step including transmitting said stream of data packets to one or more cable television systems that receive the transmitted stream of data packets and retransmit said stream of data packets via cables to a set of subscribers, and including in said stream of transmitted data packets special data packets designated as suitable for pre-emption by local programming; and

one or more of said cable television systems inserting into the stream of retransmitted data packets additional "local programming" data packets so as to pre-empt said special data packets designated as suitable for pre-emption.

~~62.~~ (amended) [The] An information transmission [system of claim 56,] method comprising the steps of:

storing an information database on one or more memory devices;

generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;

scheduling transmission of selected portions of said information database, including assigning each selected portion

of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets; and

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets;

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said transmitting step including assigning transmission times to said selected portions of said information database and reserving transmission times for transmitting portions of said information database requested by subscribers;

said method including receiving requests from subscribers, said requests each specifying a portion of said information database; and

said transmitting step including transmitting said requested portions of said information database during said reserved transmission times.

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63. (amended) [The] An information transmission [system of claim 56,] method comprising the steps of:

storing an information database on one or more memory devices;

generating and storing on said memory devices a set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof, and embedding said indices in said information database;

scheduling transmission of selected portions of said information database, including assigning each selected portion of said information database a transmission repetition rate and one or more scheduled transmission times in accordance with said assigned repetition rate;

transmitting a stream of data packets containing said selected portions of said information database in accordance with said scheduled transmission times;

receiving said transmitted stream of data packets at subscriber stations;

at each subscriber station, storing filter data corresponding to a subset of said indices, said filter data specifying a set of requested data packets which comprises a subset of said transmitted data packets; and

at each subscriber station, downloading into a memory storage device those of said received data packets which match said specified set of requested data packets;

wherein one or more subsets of said subscriber stations are interconnected via a local area network including a network server;

said storing an information database step further including embedding in said information database cross-referencing indices for cross-referencing related information;

said method including receiving at said network server said transmitted stream of data packets on behalf of an associated set of subscriber stations, storing filter data in said network server referencing a set of requested data packets, said set of requested data packets representing a union of data packets requested by said associated set of subscriber stations, and downloading into a memory storage device associated with said network server those of said received data packets which match said set of requested data packets;

said network server further adding, in accordance with predefined criteria, data corresponding to ones of said cross-referencing indices embedded in said downloaded data